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Enhanced cystathionine beta-lyase activity in transgenic potato plants does not force metabolite flow towards methionine.

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Cystathionine beta-lyase (Cbl) catalyses the second step in higher-plant methionine biosynthesis. To further characterise the role of Cbl in methionine biosynthesis, transgenic potato (*Solanum tuberosum* L.) plants were generated that express a potato cystathionine beta-lyase (StCbl; EC 4.4.1.8) under the control of the cauliflower mosaic virus 35 S promoter. Transgenic potato lines showed no visible phenotype but revealed an accumulation of both Cbl transcript and protein. The enzymatic activity of Cbl in these lines was up to 2.5-fold higher than that of wild-type plants. GC-MS measurements of aspartate-derived metabolites, however, showed no significant changes in content of amino acids and pathway intermediates when transgenic and wild-type plants were compared. Cbl over-expression did not change the expression patterns and gene products of other pathway-relevant genes as evident from RNA and protein blot analyses. Despite the essential role of Cbl in plant growth and development, the data presented indicate that the homologous over-expression of Cbl is not in itself able to enhance metabolic flux towards methionine biosynthesis.

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Set Name Query

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DB=USPT,DWPI; PLUR=YES; OP=OR

<u>L20</u>	L9 and seed adj specific adj promoter and transit adj peptide and selectable adj marker and homologous	9	<u>L20</u>
<u>L19</u>	L9 and seed adj specific and transit adj peptide and selectable adj marker and homologous	11	<u>L19</u>
<u>L18</u>	L17 and seed adj specific adj promoter	9	<u>L18</u>
<u>L17</u>	L15 and seed adj specific	11	<u>L17</u>
<u>L16</u>	L9 and ribosomal adj binding	3	<u>L16</u>
<u>L15</u>	L9 and transit adj peptide and selectable adj marker and homologous	37	<u>L15</u>
<u>L14</u>	L13 and rbc	0	<u>L14</u>
<u>L13</u>	L12 and gene adj 10	6	<u>L13</u>
<u>L12</u>	L11 and leader adj sequence	8	<u>L12</u>
<u>L11</u>	L10 and seed adj specific	11	<u>L11</u>
<u>L10</u>	L9 and transit adj peptide	38	<u>L10</u>
<u>L9</u>	plastid adj transformation	78	<u>L9</u>

DB=USPT; PLUR=YES; OP=OR

<u>L8</u>	L6 and Tn near2 10	0	<u>L8</u>
<u>L7</u>	L6 and gene adj 10	0	<u>L7</u>
<u>L6</u>	L4 and leader adj sequence	3	<u>L6</u>
<u>L5</u>	L4 leader adj sequence	6860	<u>L5</u>
<u>L4</u>	L3 and rbc	3	<u>L4</u>
<u>L3</u>	L2 and seed adj specific	11	<u>L3</u>
<u>L2</u>	L1 and transit adj peptide	28	<u>L2</u>
<u>L1</u>	5451513	45	<u>L1</u>

END OF SEARCH HISTORY